

Patient: (SID: 1158)

Report Date: April 14, 2010

Login Date: April 13, 2010

**TOXIC AND NON-NUTRITIONAL**

|                | Result (ug/g) | High Limit | --- Acceptable--- | ----- Above Acceptable Limits ----- |    |
|----------------|---------------|------------|-------------------|-------------------------------------|----|
| Mercury (Hg)   | 0.260         | 1.00       |                   |                                     | Hg |
| Lead (Pb)      | 0.132         | 1.60       |                   |                                     | Pb |
| Cadmium (Cd)   | 0.008         | 0.50       |                   |                                     | Cd |
| Arsenic (As)   | 0.032         | 1.00       |                   |                                     | As |
| Aluminium (Al) | 1.06          | 10.00      |                   |                                     | Al |
| Antimony (Sb)  | 0.012         | 1.00       |                   |                                     | Sb |
| Barium (Ba)    | 0.994         | 1.50       |                   |                                     | Ba |
| Beryllium (Be) | 0.0010        | 0.050      |                   |                                     | Be |

Weighted Total Toxicity Assessment (5) |||||||

**NUTRITIONAL ELEMENTS**

|                           | Result (ug/g) | Expected (ug/g) | Below Normal | Normal | Above Normal |    |
|---------------------------|---------------|-----------------|--------------|--------|--------------|----|
| <b>Mainly Structural</b>  |               |                 |              |        |              |    |
| Calcium (Ca)              | 373.2         | 375-875         |              |        |              | Ca |
| Magnesium (Mg)            | 34.58         | 44-98           |              |        |              | Mg |
| Sulphur (S)               | 41996         | 35000-50000     |              |        |              | S  |
| Silicon (Si)              | 28.65         | 15-80           |              |        |              | Si |
| Boron (B)                 | 0.913         | 0.5-3.5         |              |        |              | B  |
| Phosphorus (P)            | 162.45        | 125-250         |              |        |              | P  |
| Strontium (Sr)            | 0.79          | 0.8-6.0         |              |        |              | Sr |
| <b>Mainly Electrolyte</b> |               |                 |              |        |              |    |
| Potassium (K)             | 19.55         | 10-80           |              |        |              | K  |
| Sodium (Na)               | 65.24         | 30-200          |              |        |              | Na |
| <b>Mainly CoFactor</b>    |               |                 |              |        |              |    |
| Zinc (Zn)                 | 175.2         | 140-200         |              |        |              | Zn |
| Copper (Cu)               | 13.1          | 12-38           |              |        |              | Cu |
| Iron (Fe)                 | 8.57          | 8-18            |              |        |              | Fe |
| Selenium (Se)             | 1.202         | 0.5-2.0         |              |        |              | Se |
| Chromium (Cr)             | 0.438         | 0.2-1.2         |              |        |              | Cr |
| Manganese (Mn)            | 0.18          | 0.2-0.8         |              |        |              | Mn |
| Nickel (Ni)               | 0.097         | 0.15-1.0        |              |        |              | Ni |
| Vanadium (V)              | 0.041         | 0.01-0.15       |              |        |              | V  |
| Molybdenum (Mo)           | 0.0119        | 0.03-0.15       |              |        |              | Mo |
| Cobalt (Co)               | 0.002         | 0.02-0.20       |              |        |              | Co |

**SIGNIFICANT RATIOS**

|       | Result | Expected |       | Result | Expected |
|-------|--------|----------|-------|--------|----------|
| Ca:Mg | 10.8   | 4-20     | Ca:Pb | 2827   | >84      |
| Ca:P  | 2.3    | 1.5-7.0  | Fe:Pb | 64.9   | >4.4     |
| Ca:K  | 19.1   | 9.4-135  | Fe:Hg | 33.0   | >22      |
| Ca:Na | 5.7    | 3.8-44   | Se:Hg | 4.62   | >1.0     |
| Ca:Fe | 44.0   | 21-109   | Zn:Hg | 674    | >200     |
| Na:K  | 3.3    | 2.0-4    | Zn:Cd | 21900  | >800     |
| Na:Mg | 1.9    | 0.2-2.2  |       |        |          |
| Zn:Cu | 13.4   | 4-17     |       |        |          |
| Fe:Cu | 0.7    | 0.20-1.5 |       |        |          |

**OTHER ELEMENTS**

The significance of these elements in hair has not been established. Higher than normal values may indicate exogenous sources.

**Potentially Toxic**

|                | Result | Expected |
|----------------|--------|----------|
| Bismuth (Bi)   | 0.060  | <1.0     |
| Palladium (Pd) | 0.0025 | <1.0     |
| Platinum (Pt)  | 0.0004 | <1.0     |
| Silver (Ag)    | 0.0390 | <1.0     |
| Thallium (Tl)  | 0.0001 | <1.0     |
| Uranium (U)    | 0.0026 | <1.5     |
| Tungsten (W)   | 0.0007 | <2.0     |

**Generally Non-Toxic**

|                | Result | Expected   |
|----------------|--------|------------|
| Germanium (Ge) | 0.0929 | <DL - 0.8  |
| Lithium (Li)   | 0.007  | <DL - 0.1  |
| Tin (Sn)       | 0.125  | <DL - 2.0  |
| Zirconium (Zr) | 0.1049 | <DL - 0.4  |
| Lanthanum (La) | 0.0006 | <DL - 0.05 |
| Cerium (Ce)    | 0.0007 | <DL - 0.05 |